

Serial No. 10/822,374
Docket No. NEC WNZ-2665
Amendment B Under Rule 116

REMARKS

Claim 4 has been amended to better conform to US practice.

The art rejections are respectfully traversed.

Before considering the specific art rejections, it should be noted the equalizing tap coefficients according to this invention are calculated all at once by use of a predefined matrix equation (see, e.g. equation (1) of page 8) having a large number of samples (i.e. 3000 or more as specified in independent claims 1, 8 and 10), that is, all of a predetermined number or more of sampled data of reproduced waveforms or signals (see pages 7 to 8). As a result, even if such disturbance as noise or the like occurs, the calculated tap coefficient will not diverge.

Turning now to the rejection of claims 1, 3, 5, 6 and 8-11 under 35 USC §103 (a) as being unpatentable over US. Published Patent Application 2003/0002407 to Fujiwara, independent claim 1 requires, in part: "calculating an equalization coefficient for producing a smallest difference between a target waveform and an equalized waveform by the least square technique by using 3000 or more of sampled waveform data."

Independent claims 8 and 10 contain similar limitations. The Examiner has improperly read this feature as being taught in paragraphs 59 and 60 of Fujiwara. The Examiner seizes on the words "quantizes" and "quantization" in paragraph 59 as suggesting the sampling frequency is significantly higher than a bit clock of the analog signal. This conclusion is unwarranted and improper. Referring to the Examiner's definition of quantization on page 2 of the office action, as restricting a variable quantity "to discrete values rather than to a continuous set of values", every A/D converter can be said to quantize an analog signal.

But not every A/D converter obtains three thousand or more samples or operates at a

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frequency higher than a bit clock of the analog signal. Thus, the Examiner's conclusion is improper and not fairly based in the cited art.

Moreover, Fujiwara teaches that a technique obtains the optimal tap coefficient for equalization by iteration. This technique corresponds to a technique which has been described in the introductory portion of the specifications in the discussion of the prior art (see page 3, last paragraph). Accordingly, the equalization by the iteration is susceptible to large disturbance by, for example, noise or the like and, thus, the calculated coefficients do not converge but diverge, which is a problem as described in the discussion of the prior art.

The number of sampled data specified in the present invention is the number of data signals output by the PLL circuit included in the A/D converter (see page 7, lines 4-8).

On the contrary, as the number of samples suggested in Fujiwara, the Examiner says that the sampling frequency is significantly higher than a bit clock of the analog signal (from Fujiwara's paragraph No. 0060). This sampling frequency is taken up for analog signal which is input to PLL circuit.

As explained in paragraph 60 of Fujiwara, the clock producing unit 5 (which is responsible for the sampling clock) is composed of a comparator 6 and a PLL circuit 7. The comparator 6 compares the analog signal with a predetermined voltage and converts the analog signal to a binary high or low level, depending on the comparison. The PLL circuit 7 produces a sampling clock synchronized to the changes in the digital signal from the comparator 6, which cannot be expected to be "significantly higher than a bit clock of the analog signal" as intimated by the Examiner on page 2 of the office action. Therefore, as Fujiwara fails to disclose or suggest all elements of independent claims 1, 8 and 10, none of these claims or the claims which depend on claims 1, 8 and 10, as the case may be, can be said to be obvious from Fujiwara.

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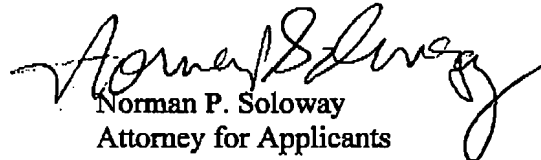
Turning to the rejection of claim 4 and the rejection of claim 7, claims 4 and 7 are indirectly dependent on claim 1. The deficiencies of the primary reference Fujiwara vis-à-vis claim 1 are discussed. Neither secondary reference, US Publication Application No. 2002/0064108 to Miyashita, nor US Patent Publication Application No. 2002/0067670 to Akiyama et al supply the missing teachings to Fujiwara to achieve or render obvious claim 1, or claims 4 and 7 which depend thereon. Thus, no combination of Fujiwara, Miyashita and Akiyama et al. would achieve or render obvious claim 1, or claims 4 and 7 which depend thereon.

The foregoing Amendment makes no claim changes that would require further search by the Examiner and thus should be entered as a matter of right.

Having dealt with all the objections raised by the Examiner, the Application is believed to be in order for allowance. Early and favorable action is respectfully requested.

In the event there are any fee deficiencies or additional fees are payable, please charge them (or credit any overpayment) to our Deposit Account Number 08-1391.

Respectfully submitted,



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I hereby certify that this correspondence is being sent via facsimile to EXAMINER Nathan Andrew Danielsens of the United States Patent and Trademark Office at facsimile number (571) 273-8300, on November 6, 2007, from Tucson, Arizona.

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